

1. (currently amended): A boron phosphide-based semiconductor light-emitting device comprising:

a substrate of silicon single crystal;

a first cubic boron phosphide-based semiconductor layer that is provided on a surface of the substrate and contains twins;

a light-emitting layer that is composed of a hexagonal Group III nitride semiconductor and provided on the first cubic boron phosphide-based semiconductor layer, said light-emitting layer having a multi-quantum well structure comprising a plurality of well layers; and

a second cubic boron phosphide-based semiconductor layer that is provided on the light-emitting layer, contains twins and has a conduction type different from that of the first cubic boron phosphide-based semiconductor layer,

wherein the light-emitting layer has a profile of phosphorus atom concentration that gradually- monotonically decreases from a bottom to a top thereof in a thickness direction such that the phosphorus atom concentration among the plurality of well layers is highest for the well layer closest to the substrate and is lowest for the well layer farthest from the substrate, and

a phosphorus atom concentration at a bottom of the light-emitting layer is  $5 \times 10^{18} \text{ cm}^{-3}$  to  $2 \times 10^{20} \text{ cm}^{-3}$ .